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A REVIEW OF LITERATURE ON OFF-FARM  
MOVEMENT AND MIGRATION<sup>a</sup>

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A REVIEW OF LITERATURE ON OFF-FARM  
MOVEMENT AND MIGRATION<sup>a</sup>

by

Claude Falgon<sup>b</sup>



<sup>a</sup> This working paper is a slightly modified preliminary version of Chapter 2 of the author's forthcoming Ph.D. thesis entitled "Pre-retirement Exit of Farm Operators: Conceptual Framework and Empirical Study". It is not to be quoted without the author's authorization in writing.

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## FOREWORD

This paper is essentially the second chapter of a Ph.D. thesis in Agricultural Economics entitled "Pre-retirement Exit of Farm Operators: Conceptual Framework and Empirical Study". Thus, here and there, some references to other parts of the study will be found. I apologize for not having weeded them all out.

I thought, however, that this review would be of some interest and use to enough people so that it deserved a wider distribution than the one a thesis usually receives. This objective will, I hope, be attained through this working paper.

Given that some semantic confusion has existed in the literature and given that I chose a terminology which is at variance with the one found in some of the works cited, it is necessary to clarify the meaning of some key words. This is done below.

Off-farm mobility. Potential ability of a farm operator or a farm worker to cease working in the farm sector.

Off-farm movement. The act by a farm operator or a farm worker to cease working on a farm.

Off-farm migration. The act by a farm operator or a farm worker to leave a farm area. Off-farm migration is related to change of geographical location, to change of residence. Off-farm migration can be considered to imply off-farm movement, but off-farm movement may occur without off-farm migration.

Exit from farming. A farm operator's cessation of farming activities.

Entry into farming. The act of starting to operate a farm.

Pre-retirement exit from farming. A farm operator's off-farm movement followed by his involvement in a non-farm occupation. Pre-retirement exit from farming may or may not be accomplished by off-farm migration.

Exiter. A farm operator who exits from farming.

Stayer. A farm operator who remains in farming over the considered period.

Pre-retirement exiter. A farm operator who performs a pre-retirement exit from farming.



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## A REVIEW OF LITERATURE ON OFF-FARM MOVEMENT AND MIGRATION

This survey is divided into five sections. The first section delimits the scope of the review of literature and provides a framework through which various studies can be related to each other and to the topic of this research. The second section is a brief review of theories of off-farm movement and migration which have appeared in the literature. In the third and fourth sections, the main empirical studies of off-farm movement and migration, conducted at the macro-level or at the micro-level, are summarized. The fifth section presents some of the policy recommendations made by economists in relation to off-farm movement and migration.

### General Scope of the Literature

From the following review the reader will realize that numerous studies of off-farm movement and migration have been conducted. Approaches vary greatly. This review illustrates the variety of approaches which have been adopted to date and attempts to contrast and relate these different approaches.

Most of these studies have been prompted by one of the following general trends observed in recent decades: (1) decreasing number of farm operators, (2) decreasing farm labor force, (3) decreasing farm population, (4) decreasing rural population as a proportion of total population. Number of farm operators, farm labor force, farm population and rural population are different concepts covering different realities. Nevertheless, they have something in common. This commonality consists of the ability to measure a latent variable which can be described as the social and economic importance of the farm sector. These measures differ substantially one from the other. The number of farm operators, besides giving information on the magnitude of the farm industry, provides information on its structure and its degree of economic concentration. The farm labor force is a measure of the amount of labor utilized in agriculture. It does not, however, take into account the number of days or hours that each individual in the labor force actually works. The farm population, defined as the number of persons living on farms, is a measure of the number of persons related sociologically to agricultural production; it embodies the concept of farming as a "way of life". Rural population is a measure of the number of persons living directly or indirectly from agriculture only if non-agricultural industries are located only in cities and if daily commuting of rural residents to city-work does not occur. These pre-conditions can hardly be considered satisfied at the present time and the validity of rural population as a measure of the socio-economic importance of the agricultural sector is threatened.

Number of farm operators, farm labor force, farm population and rural population are all the cumulative and aggregate result of decisions made by individuals. They result, however, from different "elementary decisions", namely: to operate a farm or not to operate a farm, to work in agriculture or to work in another sector, to live on a farm or to live elsewhere, to live in a rural area or to live in an urban area. Decisions, as they are actually made by individuals, consist of a single or several elementary decisions: a farm operator may decide to leave farming and go to work in the nearest city, in which case an exit-decision and a migration-decision are taken simultaneously as a single decision. This composite nature of actual decisions renders empirical analysis more complex.

Authors of the macro-level studies reviewed in this chapter have tended to concentrate on the analysis of changes in one of the following quantities: (1) the number of farm operators, (2) farm population, (3) rural population. In micro-level studies, authors have tended to concentrate on one of the corresponding elementary decisions, without clearly understanding that such elementary decisions are rarely observable in isolation; it follows that such micro-level studies are often looking at the same actual micro-behaviors, but through different glasses because they focus on one particular aspect of this behavior.

It is contended that the failure to analyze and clarify the methodological issues arising because the off-farm movement and migration phenomena can be viewed from different angles has hindered an orderly development of empirical research. This failure explains

also the lack of consistency in the terminology used in the literature.

The topic of this research concerns a specific individual decision and its consequences on the farm industry: the pre-retirement decision of farm operators to leave agriculture. Studies surveyed in this chapter are directly related to pre-retirement exit from farming, but they usually deal with several of the aforementioned elementary decisions.

#### Theories Explaining Off-Farm Movement and Migration

Several theories have been proposed to explain, at different levels, off-farm movement or off-farm migration. The treadmill theory purports to explain the general forces which seem to act on the entire farm industry and to elicit a rapid structural adjustment. The career theory proposes a general pattern for each individual behavior in relation to occupational choice. The "push-pull" theory proposes a classification of the factors which affect individuals in their decision to leave farming. The benefit-cost theory proposes a general model for the individual decision concerning occupational mobility and geographical migration. Each of these theories is discussed below.

#### The Treadmill Theory

The general consensus among economists is to consider that the drastic reduction in the relative importance of agriculture in the recent decades is due to economic growth and output-increasing technology.

For McDonald, farm outmigration is to be analyzed as an integrative adjustment to economic growth: "the approach is to view farm outmigration as a major aspect of a long, historical process of integration, through which agriculture is gradually becoming at one with a growing industrial economy."<sup>1</sup>

The introduction of output-increasing technology together with a slowly increasing demand for agricultural products has entailed generally depressed prices for these products. Low returns due to depressed products prices increase the incentive to adopt further output-expanding technology as the only way to maintain income. Farmers find themselves caught into a general movement of forced adoption of new technology and ever depressed prices. This situation is typically what Platt calls a social trap.<sup>2</sup> Tweeten, while accepting this treadmill theory as an explanation of past economic desequilibrium until the 1950's, discarded it for the more recent years on the ground that, since 1960, productivity in agriculture rose slower than demand for agricultural products. He concluded:

The treadmill theory gives very useful insight into the dynamic context in which the farm problem of low returns arise, but is less helpful in explaining the persistence of the problem in growing farm economy in which demand grows faster than supply.<sup>3</sup>

<sup>1</sup> Stephen L. McDonald, "Farm Outmigration as an Integrative Adjustment to Economic Growth," Social Forces 34 (December 1955): 119.

<sup>2</sup> John Platt, "Social Traps," American Psychologist 28 (August 1973): 641-651.

<sup>3</sup> Luther G. Tweeten, "Theories Explaining the Persistence of Low Resource Returns in a Growing Economy," American Journal of Agricultural Economics 51 (November 1969): 800-801.

### The Career Theory

The career theory holds that there is a typical pattern of occupational choices made by individuals during their life-span. Based on his tastes and ability, an individual chooses a certain occupation-type at the time he enters the labor force. This individual is expected to stay in this occupation until retirement.

The career theory emphasizes rigidity and irreversibility of occupational choice. This is justified by the existence of forces which tend to maintain an individual in the occupation he entered. These forces can be classified into two categories: economic and sociological forces. First, occupation is an important determinant of the social status of an individual and casts him into a role. As Weerdenburg states: "the transition to another occupation mostly requires radical social re-orientation and very considerable adaptation on the part of the person concerned".<sup>4</sup> Second, because specific skills and knowledge are required for each occupation, mobility from one to another occupation entails that some previously acquired skills are rendered useless and others need to be acquired. Some previous investments in human capital are wasted and some new investments are necessary. A human capital loss is involved in all transfers from one occupation to another. Consequently, an individual who has to move into a new occupation finds himself at an economic disadvantage compared to others who have been in this occupation since they entered the labor force. In summary, the necessity of social re-adjustment and human capital losses are justifications for the rigidity and irreversibility bias embodied in the career theory of individual occupational choice.

<sup>4</sup> L.J.M. Weerdenburg, "Farmers and Occupational Change," Sociologia Ruralis, 13 (First quarter 1973): 29.

The career theory, when applied to farm operators, holds that, in general, individuals enter farming at an early age and leaves farming in order to retire; career choices become more and more irreversible and farm operators' mobility decreases as age increases. In this context, pre-retirement exit from farming appears as a departure from a normal pattern of behavior.

For Sofranko and Pletcher there is no complete irreversibility of the original occupational choice, but when this decision is to be reversed, transition toward non-farm employment follows a general pattern:

The evidence suggests that a typical pattern of mobility for many low income, full-time farmers is from a full-time to part-time status, to complete off-farm employment. From this perspective, part-time farming is regarded as a stage in a "career", a step to eventual full-time, off-farm employment.<sup>5</sup>

Part-time farming, thus is considered to be a transitional state.

#### The "Push-Pull" Theory

This theory was developed by demographers in relation to research on population adjustments to changes in social and economic conditions. Sofranko and Pletcher<sup>6</sup> applied it to the analysis of off-farm movement. This theory postulates that individuals are simultaneously under the effect of two actions: a "pull" action and a "push" action. The "pull" action is caused by better employment

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<sup>5</sup> A.J. Sofranko and W.R. Pletcher, "Factors Influencing Farmers' Expectations for Involvement in Agriculture," Illinois Agricultural Economics 14 (July 1974): 6.

<sup>6</sup> Ibid.

opportunities, higher income, more enjoyable living conditions, and new or different activities. The "push" action is caused by the actual hardship people are enduring in their situation; then, movement of individuals can "occur as a flight from undesired social or economic situations".<sup>7</sup>

The "push" variables proposed by Sofranko and Pletcher to explain why farmers leave farming are farm size, as measured by the total number of acres operated, and net farm income (excluding income from custom farm work). The "pull" variables chosen were age of operator, level of education of operator, involvement in off-farm work, and distance from the farm to the nearest large urban center.

Sofranko and Pletcher concluded their study as follows:  
... it is not easy to assign primacy to either "pull" or "push" factors when explaining farmers' expectations, or to discuss "pull" factors apart from consideration of farm income level.

... it is difficult to differentiate between "push" and "pull" influences.<sup>8</sup>

Two main criticisms can be leveled at to the "push-pull" theory. First, it does not rely on a precise model of individual behavior. Second, the dichotomy push factors vs. pull factors, which is the very crux of the thoery, does not seem to have any empirical relevance. Reference to factors and to their effect on individual decision, without qualification of the way this effect is thought to be brought about, is sufficient.

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<sup>7</sup> Donald J. Boguc, Principles of Demography (New York: John Wiley and Sons, 1969), p. 157, quoted in Sofranko and Pletcher, "Farmers' Expectations," p. 7.

<sup>8</sup> Sofranko and Pletcher, "Farmers Expectations," p. 11.

### A Benefit-Cost Model

The decision of a farm operator to leave farming very often includes the decision to migrate; in this case the decisions regarding off-farm movement and off-farm migration are directly connected. Aside from the simultaneity, the decisions to leave farming and to migrate are related in the sense that the consequences they entail are of the same nature, namely these consequences are lasting and imply drastic changes in all aspects of one's individual life, social, professional, familial. This explains that the economic model of the individual decision used in studies on geographical migration and occupational mobility have been very similar. Most studies on off-farm movement and off-farm migration conducted by economists have relied implicitly or explicitly on this benefit-cost model.

The most formalized version is due to Sjaastad who described his approach as follows:

This treatment places migration in a resource allocation framework because it treats migration as a means in promoting efficient resource allocation and because migration is an activity which requires resources.<sup>9</sup>

The model can most easily be presented taking as example the simplified case of a farm operator who is faced with two alternatives: to keep operating his farm or to leave farming and seek non-farm employment. This farmer owns certain amounts of different resources namely labor, land, fixed capital, and liquid assets. These resources

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<sup>9</sup> Larry A. Sjaastad, "The Costs and Returns of Human Migration," Journal of Political Economy 70 (October 1962): 80.

are expected to yield a certain income stream in the future. If the non-farm alternatives were to be chosen these resources would be employed in different uses and expected to yield another income stream. The transfer of resources from one set of uses to another would entail a stream of costs. The net income stream after the transfer is the difference between the stream of incomes and the stream of transfer costs. The stream of benefits to be gained by leaving farming is the difference between the stream of net incomes when resources are employed in non-farm uses and the stream of incomes when resources are used in farming.

The analogy between this decision of production abandonment and the decision to invest is clear.<sup>10</sup> The decision criterion and decision rule chosen can be any of those discussed in the capital theory literature.<sup>11</sup> The most common denominator used to compare income streams is their present value; the decision rule is, then, the maximization of this present value.

Income can be construed in many different ways. If income is construed as money income, adoption of the above decision criterion and decision rule is equivalent to assuming that the individuals are money income maximizers or profit maximizers. If income is construed as satisfaction, derived either from money income or "psychic" income, adoption of the maximization of present value decision rule is

<sup>10</sup> Early bibliographical search revealed the lack of theoretical work on production abandonment. The analogy with investment decision was rediscovered later in Marshall R. Colberg and James P. King, "Theory of Production Abandonment," *Rivista Internationale die Scienze Economiche* 20 (October 1973): 961-971.

<sup>11</sup> See, for example, J. Hirschleifer, *Investment, Interest and Capital* (Englewood Cliffs, N.J.: Prentice Hall Inc., 1970).

equivalent to assuming that individuals are satisfaction, or utility, maximizers. All authors have acknowledged, in different ways, the relevance of non-monetary benefits and costs in the individual decision to achieve occupational mobility and geographical migration; these non-monetary benefits and costs, have often been dubbed "psychic" income or costs, but the problem of translating them into monetary units has been evaded.

Sjaastad broke down the private costs of human migration into money costs and non-money costs.<sup>12</sup> The money costs include the expenses incurred by migrants in the course of moving. The non-money costs include foregone earnings (of opportunity costs) and "psychic" costs. Private returns are also divided into money returns and non-money returns. Sjaastad specified:

Money returns so defined are sufficiently general to encompass not only those returns stemming from earnings differential between places, but also the return accruing to the migrant in his capacity as a consumer.<sup>13</sup>

Non-money returns reflect the preference of the individual for the new place of residence as compared to his former one. When the model is applied in the context of occupational change non-money returns reflect the preference for the new occupation as compared to the former one.

Sjaastad acknowledged that psychic costs and psychic returns affect an individual's decision. Nevertheless, he argued that "the psychic costs of migration involve no resources for the economy and

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<sup>12</sup> Sjaastad, "Human Migration," p. 83.

<sup>13</sup> Ibid., p. 86.

and should not be included as part of the investment in migration", and that "likewise we should ignore non-money returns arising from locational preferences to the extent that they represent consumption which has a zero cost of production."<sup>14</sup>

Maddox<sup>15</sup> inventoried and investigated the private costs associated with the movement out of agriculture. The cash costs include moving expenses for family and belongings and increase in living expenses during the process of moving. Non-money costs are the opportunity cost of income which would have been received during the time the migrant stays unemployed had he remained in agriculture and the psychic cost of leaving occupation or residence. Maddox suggested the following hypotheses regarding the various costs:

First, the opportunity cost is of such minor importance that it can be ignored. Second, the cash costs of transportation are of minor significance. Third, the costs of food and lodging during the transition period, above the level of such costs on the farm, are not of great importance, provided the transition period between farm and non-farm employment is not unduly long. Fourth, the subjective or psychic costs, though difficult to define and measure have both personal and social implications which cannot safely be ignored.<sup>16</sup>

To the inventory of costs by Maddox should be added cash costs of search for urban housing and non-farm jobs, whether these costs are incurred before or after actual occupational transfer or migration has taken place.

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<sup>14</sup> Ibid., pp. 85-86.

<sup>15</sup> J.G. Maddox, "Private and Social Costs of the Movement of People Out of Agriculture," American Economic Review 50 (May 1960): 392-402.

<sup>16</sup> Ibid., p. 393.

There is no agreement in the literature on which income should be entered for the farm alternative. This issue is closely related to whether the decision unit is the farm operator or the family and to whether the decision to leave agriculture necessarily entails geographical migration or not. The issue related to the choice of the decision unit will be discussed further in chapter 3; at this point, it suffices to state that the family should be considered as the basic decision unit. From a theoretical point of view it is clear that, in this case, expected family income should be entered for each of the alternatives. This way, any income earned by the operator's wife must be added to farm income considered as return to the operator's labor. If migration is not necessary when the operator ceases to farm, the wife's earnings will be entered again for the non-farm alternative. Even though the issue is settled theoretically, practical problems will often remain because of the difficulties in collecting data on income earned and expected to be earned by family members in the different alternatives.

From this strictly economic model a number of hypotheses have been derived and many attempts at testing them have been conducted. These hypotheses are:

1. The main reason for leaving farming is income differential between the farm and non-farm alternatives;
2. For most off-farm movers and migrants the actual gains exceed the costs;
3. The rate of unemployment in urban areas, which is a measure of the lack of non-farm employment alternatives, is negatively related to off-farm movement and migration;

4. Experience in non-farm employment will increase farm operators' mobility as it increases expected non-farm income, facilitates search for a non-farm job, and, consequently, reduces costs associated with job-search and migration;

5. Rates of off-farm movement and migration among adult operators decrease with age since money and psychic costs associated with movement and migration are lower for young adults and since potential benefits can be expected to be captured by young adults over a longer span of time;

6. Rates of off-farm movement and migration decrease with distance to nearest large urban center since costs associated with job-search and migration increase with distance;

7. Off-farm movement and migration need not equalize money income because of the existence of fixed costs in off-farm migration and of differential in psychic income between occupations and locations.<sup>17</sup>

#### Summary

Four theories explaining off-farm movement and migration were reviewed in this section: (1) the treadmill theory, (2) the career theory, (3) the "push-pull" theory, and (4) the benefit-cost model. These theories have different scopes. The treadmill theory mainly sheds some light on the long-term dynamic context in which off-farm movement and migration occur. The career theory presents a

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<sup>17</sup> These hypotheses, except hypothesis 4, are stated in lesser details in Stephen L. McDonald, "Economic Factors in Farm Out-Migration: A Survey and Evaluation of the Literature," Austin, Texas, n.d. (Mimeographed), p. 6.

general pattern of occupational choices as made by farmers and is more a simplifying description than an explicative theory. The "push-pull" theory distinguishes two types of causes of off-farm movement and migration according to the way they exert their action. Finally, the benefit-cost model is the most refined theory, and accommodate any hypothesized factor; it has been underlying, explicitly or implicitly, the majority of the empirical studies which are reviewed in the next two sections.

#### Empirical Studies at a Macro-Level

This section reviews empirical studies of off-farm movement and migration conducted at a macro-level. In these studies emphasis is put on the analysis of relationship between aggregate variables such as number of farm operators, farm population, unemployment rate, aggregate farm income, etc. Data used are usually from secondary sources where they are already aggregated: the main source is census publications. In some cases individual data are re-aggregated in a more suitable way. In any case, aggregate data are analyzed.

D. G. Johnson,<sup>18</sup> in one of the first studies devoted to migration out of agriculture, analyzed data from the 1950 U.S. Census of Population. He concluded that: (1) most farm to non-farm migrations were for relatively short distances, (2) a large proportion of migrants were family members, i.e. the assumption that most migration from farm to non-farm are made by young people and bachelors was not consistent with the data analyzed, (3) jobs obtained by off-farm migrants had earnings ranging from 85 to 90 percent of those obtained by members of the non-farm population of the same age and sex.

<sup>18</sup>D. Gale Johnson, "Policies to Improve the Labor Transfer Process," American Economic Review 50 (May 1960): 403-418.

Cohort analyses of farmers have been conducted in the U.S.A. by Kanel, Tolley and Hjort, and Clawson.<sup>19</sup> A cohort of farmers consists of all farmers born during the same period, usually a decade. The number of farmers in each cohort can be followed over long periods in different censuses. Patterns of different cohorts have been found to be very similar: the number of farmers in a cohort rises till middle age as young people keep entering farming and falls thereafter as more farmers leave farming due to off-farm movement, retirement or death. Most cohort analyses have emphasized the fixity of cohort patterns; thus one, or both, of the following two hypotheses are made:

(1) young people and established farmers do not respond to changing economic conditions and, more specifically, to decreasing opportunities in farming, (2) relative opportunities in agriculture and in the non-farm sector remain the same. Both hypotheses are very strong. Time is considered as being the only factor of the number of farmers in each cohort; thus, the analysis is very mechanistic.

Cohort analysis relies on aggregate data which display only net changes in the number of farmers: the net change in the number of farmers in each cohort is the algebraic sum of exits and entries. Consequently, the same cohort pattern can result from very different combinations of gross entries and exits.

<sup>19</sup> Don Kanel, "Age Components of Decrease in Numbers of Farmers, North Central States, 1890-1954," Journal of Farm Economics 43 (May 1961): 247-263; Don Kanel, "Farm Adjustment by Age Groups, North Central States 1950-1959," Journal of Farm Economics 45 (February 1953): 47-60; George S. Tolley and H.W. Hjort, "Age-Mobility and Southern Farmer Skill: Looking Ahead for Area Development," Journal of Farm Economics 45 (February 1963): 31-46; Marion Clawson, "Aging Farmers and Agricultural Policy," Journal of Farm Economics 45 (February 1963): 13-30.

Kanel found that cohort patterns were actually very similar. The only apparent change in cohort patterns appeared in the 1930's which corresponded to a decade of massive non-farm unemployment. During this period fewer farmers seemed to have left farming or retired. This seemed to imply a qualification of his previous statement on the constancy of cohort patterns. The main finding of Kanel was:

... the differences between decades, shown by aggregate rates of entry and withdrawal, were primarily the consequences, in successive periods, of the decreasing size and constant pattern of successive cohorts. ... the total number of farmers had decreased primarily because few young people had been able to enter farming.<sup>20</sup>

Clawson<sup>21</sup> also observed similarity in cohort patterns and stressed the importance of the decreasing size of entering cohorts as the cause for the decreasing number of farmers. The main consequence of these smaller entering cohorts was a shift of the age distribution of farmers toward older age classes. Clawson advocated the conducting of cohort analyses at lower level of aggregation, e.g. state and county levels, because social and economic conditions can differ drastically from one region to another and because these differences are masked through the process of aggregation. Clawson concluded from his study that, since farmers do not withdraw from farming but refuse to enter, any drastic decrease in the number of

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<sup>20</sup> Kanel, "Farm Adjustment," p. 53.

<sup>21</sup> Clawson, "Aging Farmers," p. 16.

farmers, as was being advocated at that time is impossible; the current adjustment in the number of farmers was going to be continuing adjustment. Finally, Clawson emphasized that the adjustment in agriculture is not just only a matter of number of farmers but also of quality: the quality of young farmers entering and of those staying in farming and the quality of the rural-agricultural communities affected by this adjustment of the farm sector.

Johnston and Tolley developed an extension of cohort analysis. They rejected the usual assumptions embodied in cohort analysis:

Most of the analysis has been descriptive rather than econometric and has tended to assume that cohort patterns are completely fixed.

A closer examination of cohorts suggests that the differences found between cohort patterns are in part systematic. While it is true that each cohort has a generally similar pattern, in a decade when there is sharp change in total number of farms, all cohorts are deflected in the same direction from their characteristic pattern.<sup>22</sup>

Johnston and Tolley specified and estimated a model which incorporated this effect of exogenous factors on cohort patterns. In their model, the number of farm operators in any one age class was assumed to depend on the number of rural farm males surviving to this age class from the previous period and the unobserved ratio of farm to non-farm income facing career choosers. Given that coefficients of this model were assumed to be different for each age class, there were as many equations to estimate as there were age classes. As the income ratio

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<sup>22</sup> W.E. Johnston and G. S. Tolley, "The Supply of Farm Operators," *Econometrica* 36 (April 1968): 366.

was not observed, the model was used to make inferences about this ratio . As a consequence the absolute elasticities of the number of farmers with respect to the ratio of farm to non-farm income could not be estimated, but only the ratio of the elasticities of the age groups could be estimated. Results showed that response to changes in the ratio of farm to non-farm income declined as age increased.

Winkelman<sup>23</sup> aimed at determining factors affecting the rate of reduction of the labor force employed in agriculture. To do so, he hypothesized several linear models, which he tested on county data. The dependent variable was the rate of reduction of the farm labor force. The independent variables were: expected per capita incomes from farm labor, from farm assets and from work off the farm holding, information about non-farm opportunities, average age of the county farm labor force, dispersion of farm income and expected level of employment in non-farm work. Winkelman was well aware of the methodological shortcomings of using the net rate of change in the labor force:

The rate of a change is influenced by entrants into the farm work force, retirements, deaths, and those quitting farming for other reasons. Each of these categories is undoubtedly influenced in a different way [by the independent variables]....<sup>24</sup>

Lack of data on gross entries and exits compels one to specify and estimate aggregate models which may differ substantially from the disaggregated models. The most interesting finding of the study was that increased farm income tended to reduce the rate of decrease of the farm labor force. The sensitivity of the rate of decrease to changes in farm income was, however, small.

<sup>23</sup> Don Winkelman, "A Case Study of the Exodus of Labor from Agriculture: Minnesota, "Journal of Farm Economics 48 (February 1966): 12-21.

<sup>24</sup> *Ibid.*, p. 14.

Sjaastad<sup>25</sup> studied off-farm migration relying on U.S.D.A. data pertaining to changes in residence (from a farm residence to a non-farm residence and vice-versa); the concept central to his analysis is, therefore, farm population. This feature of the study implies that inferences about off-farm movement, as defined in the present study, must be taken with great care. Sjaastad's main contention was that the rate of off-farm migration is related to the business cycle:

Percentage unemployment rates are perhaps the best single index to reflect the manner in which swings of the [business] cycle are likely to affect off-farm opportunities for potential migrants and hence the rate at which they abandon agriculture.<sup>26</sup>

This was shown clearly by correlation analysis, where a very significant negative relationship appeared for all time periods, between the rate of net off-farm migration and the unemployment rate. Even though he found that the relative farm income variable (ratio of regional per capita farm to non-farm income) was not a significant variable in the determination of off-farm migration, Sjaastad concluded that "it would be an error to conclude that income differences are not a relevant force influencing off-farm migration"<sup>27</sup> and suggested that the use of less aggregated data, improvement in the measure of income, controlling for skill and educational levels, and the development of a more sophisticated permanent income concept would allow relative farm income to appear as a significant factor of off-farm migration.

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<sup>25</sup> Larry Sjaastad, "Occupational Structure and Migration Patterns," in Labor Mobility and Population in Agriculture, ed. Iowa State University Center For Agricultural and Economic Adjustment (Ames: Iowa State University Press, 1961), pp. 8-27.

<sup>26</sup> *Ibid.*, p. 12.

<sup>27</sup> *Ibid.*, p. 16.

Szabo<sup>28</sup> studied the decrease in farm population on the Canadian prairies during the period 1961-1971 on the basis of data generated from the 1961 and 1971 Census of Agriculture. His study was dubbed as being "areal" by which it is meant that each "observation" used for statistical analysis consisted of the average values of a number of selected variables for each area. Szabo tested a certain number of hypotheses using regression techniques with the ratio of depopulation being the dependent variable. The following hypotheses, which were neither clearly stated nor well justified, were found to be consistent with the data analyzed:

1. The proportion of rented land in an area is inversely related to the ratio of farm depopulation, as a high proportion of rented land is considered to indicate that off-farm migration occurred massively in previous periods, thereby leading to a more stable farm population.
2. The proportion of farmers reporting off-farm work is positively related to the ratio of farm depopulation.
3. The total capital value of farms in an area is negatively related to the ratio of farm depopulation.
4. High level of investment in machinery and equipment, which is "indicative of good conditions for agriculture"<sup>29</sup>, is negatively related to the ratio of farm depopulation.

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<sup>28</sup> Michael L. Szabo, "Depopulation of Farms in Relation to the Economic Conditions of Agriculture on the Canadian Prairies," Geographical Bulletin 7 (Fourth Quarter, 1965) 187-202.

<sup>29</sup> Ibid., p. 193.

Diehl<sup>30</sup>, starting from a crude benefit-cost micro-economic model of off-farm movement and migration, hypothesized a macro-level where net off-farm migration and movement is a function of the following characteristics of the farm population in the area considered: earning potential outside agriculture adjusted for age and educational attainment, non-farm occupational experience, race composition, farm income, expected future income from assets and distance of migration. Several variations of the basic model were tested using regression analysis. The results showed that the rate of net migration was:

1. Negatively related to farm income
2. Positively related to age
3. Negatively related to capital gains
4. Positively related to the proportion of negroes in the population
5. Positively related to level of skill.

On the other hand, the hypothesis that the rate of migration is inversely related to distance from the farm area to a non-farm employment center was rejected. Furthermore, a positive relationship between rate of migration and distance to non-farm employment center was suggested, in complete contradiction to the original hypothesis. Diehl's general conclusion was that "people do migrate in response to income incentives."<sup>31</sup>

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<sup>30</sup>William D. Diehl, "Farm-Nonfarm Migration in the Southeast: A Costs-Returns Analysis," Journal of Farm Economics 48 (February 1966): 1-11.

<sup>31</sup>Ibid., p. 11.

In conclusion, macro-level studies which have to rely on available secondary data cannot test macro-models which include all the variables thought to affect the micro-behavior; it should not be surprising, therefore, to experience some disillusion with the results. One particularly limiting factor, has been the lack of estimate of gross off-farm movement and migration. Micro-level studies can rely on data pertaining to individuals who have moved or migrated and, consequently, it should be expected that factors of the decision can be identified more easily at the micro-level.

#### Empirical Studies at a Micro-Level

As it was mentioned before, numerous studies have aimed at identifying, at a micro-level, the various factors affecting farmers' off-farm movement or migration decisions. Theoretical contributions are few and most studies reviewed in this section, usually rely implicitly, on a benefit-cost model similar to the one formalized by Sjaastad<sup>32</sup> for the decision to migrate. Theoretical issues will be discussed further in chapter 3; in this section studies with an emphasis on empirical analysis are reviewed. These studies are labeled "micro-level" because they rely on data on individuals and because their main emphasis is on the factors affecting the individuals' decisions.

Bowring and Durgin<sup>33</sup> reported some surprising results from a study of a sample of farmers in New Hampshire. The following hypotheses were tested and rejected:

32 Sjaastad, "Human Migration."

33 J.R. Bowring and O.B. Durgin, Factors Influencing the Attitudes of Farmers Towards Migration Off Farms, Agricultural Experiment Station Bulletin 458 University of New Hampshire, n.d.

1. Lower income farmers are more prone to considering to leave farming.

2. The age of the operator bears on his attitude towards leaving the farm (the direction of this effect was not specified).

3. Farmers with higher level of formal education are more likely to consider off-farm movement or migration.

4. Farmers not considering leaving farming are more progressive in their farm management practices.

5. Farmers with strong attachment to their community, as represented by participation in church and farm organizations, are less inclined to consider leaving farming.

Bowring and Durgin ascribed these negative results to the failure to consider off-farm income as an intrinsic determinant of off-farm migration on the same footing as farm income and other farm related factors.

Baird and Bailey<sup>34</sup> addressed the questions of what are the characteristics of farmers who leave farming, of whether the shift from farm to non-farm occupations is a sudden one or proceeds by stages, and of what happens to the land when people have left. The empirical study was performed on a very small sample in a Mississippi county; thus presenting a serious threat to the validity of the results. The hypothesis that off-farm movement or migration is achieved through

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<sup>34</sup> Andrew W. Baird and Wilfrid C. Bailey, Farmers Moving Out of Agriculture, Agricultural Experiment Station Bulletin 568, Mississippi State University, 1958.

three stages, namely, obtaining a non-farm income to supplement farm income, increasing the income share from non-farm employment, and actual exit from farming, was supported by the data. Results also showed that a majority of farmers having left farming had retained their land.

Roy also used a small sample to study the "differential aspiration of farmers to seek a better paying job",<sup>35</sup> as measured on a Gutman-type scale based on the answers to a question on which factors, among the ten which were suggested, would stop the farmer to grasp an opportunity of earning a substantially higher money income. Results showed that "differential aspiration" was not related to any of five measures of performance of the farm, to educational attainment, to family income, to level of living, nor to operator's non-farm experience. On the other hand, "differential aspiration" was inversely related to age and years in farming. Surprisingly, Roy concluded that he did not pick up the adequate area to study factors related to level of aspiration; according to Roy, very low incomes and low non-farm opportunities explained why results did not fit the expected economic and sociological patterns.

Baumgartner<sup>36</sup> defined an attitude scale, called "potential mobility",<sup>37</sup> whose purport was to measure an individual's degree of

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<sup>35</sup> Prodipto Roy, "Factors Related to Leaving Farming," Journal of Farm Economics 43 (August 1961): 668.

<sup>36</sup> H.W. Baumgartner, "Potential Mobility in Agriculture: Some Reasons for the Existence of a Labor-Transfer Problem," Journal of Farm Economics 47 (February 1965): 74-82.

<sup>37</sup> The term "potential mobility" is a pleonasm which has been made necessary because the term "mobility" has been used extensively in the literature to mean "movement." In this study, "movement" and "mobility" have been used in their original meaning.

of readiness to leave farming. The empirical analysis was conducted on a sample of 100 full-time farmers. "Potential mobility" was considered as the dependent variable. Baumgartner summarized his study as follows:

The statistical analysis supported the central concept of this study that potential mobility among farmers is influenced by both economic and noneconomic variables. The most important factors proved to be age, income, and nonfarm work experience, as shown in the following findings: (1) under a variety of personal, economic, and social psychological conditions, age exerted a more extensive influence than any other independent variable; (2) in about half the relationships tested, potential mobility was significantly greater among farmers under 45 than among those aged 45 or over; (3) income was associated inversely with potential mobility in the younger group; (4) present consideration of nonfarm work had a positive relationship to potential mobility in the older group; and (5) nonfarm work experience was associated positively with potential mobility among farmers irrespective of age.<sup>38</sup>

<sup>39</sup> Hill, instead of looking at mobility, surveyed a small sample of farmers who had actually left the farm to take urban employment. Low income, health, non-availability of a farm, poor facilities, and lack of available credit were stated as the main factors which had influenced their decision to leave farming. The income factor was the most important. But money income after migration had not increased in proportion to cost of living off the farm; in other words, real income had actually decreased with migration. Surprisingly, however, when asked whether they would take the same decision again, a large majority answered that they would. This seems to be in contradiction to the statements that income was the major determinant of the decision to leave farming and that real

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<sup>38</sup> Ibid., p. 668.

<sup>39</sup> Lowell D. Hill, "Characteristics of the Farmers Leaving Agriculture in and Iowa County," Journal of Farm Economics 44 (May 1962): 419-426.

income had actually decreased; expectation of higher future incomes could, however, reconcile these contradictory statements. Difficulty to find non-farm employment was shown to be the most important hindrance to off-farm movement and migration. A comparison of movers and non-movers showed that these two groups did not differ in age, farm income, or farm size. Hill concluded from these results that, contrary to a widespread belief, those who are leaving agriculture are not "those with the lowest incomes, the least efficient, the poorest farmers, or the physically disabled."<sup>40</sup> Finally, the high proportion of tenants in the sample of movers seemed to suggest the relevance of land tenure as a factor in off-farm movement and migration.

Guither<sup>41</sup> interviewed two hundred Illinois farm operators who left farming. Characteristics of farmers who left farming were compared to those of the total farm population. Exiters were found to be more concentrated in the lowest and highest age classes and to have had more off-farm employment experience. Most exiters responded that they liked farming and cited as major reasons for leaving: income, tenure problems, physical health, and retirement. Most of the farm operators leaving farming showed a strong desire to remain and live in their community. This reluctance to migrate was reflected in the distance of migration: only ten percent migrated more than twenty-five miles away. Guither stressed that, when farmers did leave, they did it in a minimal way, trying as much as possible to minimize the social and economic adjustments they foresaw.

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<sup>40</sup>Ibid., p. 426.

<sup>41</sup>Harold D. Guither, "Factors Influencing Decisions to Leave Farming," Journal of Farm Economics 45 (August 1963): 567-576.

Bennett<sup>42</sup> performed three surveys on a small sample of farmers over a time span of 15 years. His concern was movement from full-time to part-time farming. This can be considered as partial movement if, following Sofranko and Pletcher,<sup>43</sup> part-time farming is hypothesized to be a transitional stage towards complete disengagement from agriculture. Farm income, farm income per family member, and farm operator age were hypothesized to be inversely related to subsequent movement from full-time to part-time farming. Proximity to non-farm jobs and farm operator's level of education were hypothesized to be directly related to movement from full-time farming. Multivariate analysis showed that none of the factors considered were good single predictors of full-time to part-time movement. In other words, interaction between the above factors was an important determinant of farmer's mobility.

Kaldor and Edwards<sup>45</sup> surveyed a sample of 304 Iowa pre-retirement exiters, i.e. farm operators who left farming and took non-farm jobs. Characteristics of farm operators leaving farming were compared to those of the total population of Iowa farmers; the following facts were evidenced:

1. Exiters had significantly more formal schooling
2. Exiters comprised a higher proportion of tenants

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<sup>42</sup> Claude F. Bennett, "Mobility from Full-time to Part-time Farming," Rural Sociology 32 (June 1967): 154-164.

<sup>43</sup> Sofranko and Pletcher, "Farmers Expectations."

<sup>45</sup> Donald R. Kaldor and William M. Edwards, "Occupational Adjustment of Iowa Farm Operators Who Quit Farming in 1959-1961, Agricultural And Home Economics Experiment Station Special Report 75, Iowa State University, 1975.

3. The size of the farm of exiters, as measured by acreage, was not significantly different

4. The proportion of part-time farmers among exiters was higher.

Income was considered by pre-retirement exiters as the major factor in their decision. Contrary to common belief that farmers migrate to large cities, it was found that most of the exiters found jobs in small to medium size towns. Occupational movement of farm operators from farm to non-farm employment coincided with a large increase in wives' employment. A majority of respondents thought that the real family income had increased since they left farming. A small proportion of the respondents (fifteen percent) indicated that their post-movement situation had not matched their expectations; these unsatisfied exiters had thought of re-entering farming, but very few actually had plans to do so.

The major contribution to the micro-level analysis of off-farm movement and migration is due to Hathaway and Perkins who authored together or separately several publications.<sup>46</sup>

From an empirical point of view, the major innovation of their studies was the use of a new data set: the one percent Social

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<sup>46</sup>Dale E. Hathaway, "Migration from Agriculture: The Historical Record and Its Meaning," American Economic Review 50 (May 1960): 379-391; Idem, "Occupational Mobility from the Farm Labor Force," in Farm Labor in the United States, ed. C.E. Bishop (New York: Columbia University Press, 1967), pp. 71-96; Dale E. Hathaway and Brian B. Perkins, "Farm Labor Mobility, Migration, and Income Distribution," American Journal of Agricultural Economics 50 (May 1968): 342-53; Idem, "Occupational Mobility and Migration from Agriculture," in Rural Poverty in the United States, A Report by the President's National Advisory Commission on Rural Poverty (Washington: Government Printing Office, 1968), pp. 185-237; Brian B. Perkins, "Farm Income and Labour Mobility," American Journal of Agricultural Economics 55 (December 1973): 913-920; Brian B. Perkins and Dale E. Hathaway, The Movement of Labor Between Farm and Nonfarm Jobs, Agricultural Experiment Station Research Bulletin 13, Michigan State University, 1966.

Security longitudinal sample; from this sample each individual who had covered farm employment was selected. Information available for each individual included covered earnings, industry of employment, location of employment and characteristics of the originating or receiving areas of employment. Using these data, Hathaway and Perkins studied off-farm movement and migration, both separately and from the point of view of their relationship to each other. Even though, Hathaway and Perkins sometimes aggregated individual data to study rate of movement with regional variables, their studies are reviewed in this section devoted to studies performed at the micro-level; the main justification is that data used are individual and longitudinal (i.e. the same individual is followed overtime), and the main emphasis is on identifying factors affecting the individual decision to leave farming. Data were analyzed using univariate or multivariate methods which allowed control for the effects of other variables. In most cases, results obtained through the use of multivariate analyses confirmed those obtained through cruder univariate analyses. The main findings are reviewed below, with heavier emphasis given to those pertaining to off-farm movement than to those pertaining to off-farm migration.<sup>47</sup>

Age and mobility were found to be inversely related. Negroes appeared to be more mobile in analyses unadjusted for other factors, than when adjustments were made for other factors. This

<sup>47</sup> In order to save space, results reviewed here will not be referenced individually; they all come from the already cited publications: Perkins and Hathaway, Movement of Labor; Hathaway and Perkins, "Occupational Mobility"; Idem, "Farm Labor Mobility".

discrepancy was due to the spurious effect of employment status (wage earner vs. self-employed) and age. Multiple jobholders were significantly more mobile than single jobholders. This result strongly supports the hypothesis that part-time farming is a means towards adjustment out of agriculture rather than a stable situation. Income while employed in the farm sector was not related to off-farm movement; this was taken by Hathaway and Perkins as supporting the hypothesis that people with high earnings in farming have also high potential earnings in other sectors; this also contradicted the thesis that off-farm movement tends to reduce income dispersion. Proximity to non-farm employment centers, measured by the distance to nearest Standard Metropolitan Statistical Area (SMSA), affected positively the rate of off-farm movement; this relationship, however, was not simple nor linear as evidenced by occurrence of the highest off-farm movement rates in counties which are farthest from any employment center. No clear results were obtained concerning the effect of non-farm unemployment on the rate of off-farm movement. It appeared, however, that high rate of non-farm unemployment reduced off-farm movement by a greater amount in regions with low farm income. This result cast further doubt on the commonly held thesis that off-farm movement is conducive to income equalization. Farm employment status was shown to be the most important determinant of the rate of off-farm movement; farm operators were significantly less mobile than farm workers, whether they were single jobholders or multiple jobholders. This result supported the hypothesis that ownership of assets reduces off-farm mobility. Hathaway and Perkins, gave a snapshot description

of people leaving farming: "... the probability of off-farm mobility [movement] is highest for young, multiple-job farm wage workers located in counties within 50 miles of an SMSA."<sup>48</sup>

Data available allowed Hathaway and Perkins only indirect and partial tests of the theory that occupational change is decided on the basis of expected incomes adjusted for differences in cost of living. Hathaway and Perkins, however, found enough evidence to conclude:

In general, it appears that mobility [movement] from the farm sector is largely a function of the income expectations of movers and the extent to which these expectations are achieved. The fact that mobility [movement] rates for persons with various characteristics is highly consistent with the income experience of such persons suggests that farm people may have a realistic<sup>49</sup> evaluation of their non-farm employment opportunities.

A decrease in income after off-farm movement seemed to be the major factor in the decision to return into farming. Long term earning after off-farm movement were directly related to earnings in the year following movement, and more importantly, they were also positively related to earnings in the farm sector. This finding led Hathaway and Perkins to the following conclusion:

... farm-nonfarm occupational mobility [movement] does not seem to close the income gap between the poor and those better off -- indeed it may widen it.<sup>50</sup>

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<sup>48</sup> Hathaway and Perkins, "Occupational Mobility," p. 191.

<sup>49</sup> Perkins and Hathaway, Movement of Labor, p. 31.

<sup>50</sup> Hathaway and Perkins, "Occupational Mobility," p. 207.

The study of factors affecting migration from agriculture showed that the proportion of migrants decreased with increasing age, was much higher for negroes than for non-negroes,

and was higher for farm workers than for farm operators. Surprisingly little difference was found between the proportion of migrants from counties with high family income and counties with low family income; the same result was obtained comparing counties with high proportion and low proportion of commercial farms. Hathaway and Perkins concluded their study of migration by saying:

... the significant fact is that neither low income areas nor areas lacking a commercialized agriculture have high migration rates, and consequently that farm workers in such areas rely primarily on local labor markets for non-farm employment opportunities.<sup>51</sup>

Analyzing the relationship between off-farm movement and migration, Hathaway and Perkins found that most off-farm movers do not migrate when they leave farming and that

... the proportion of migrants is highest among off-farm movers who are young, Negroes, or farm wage workers, and tends also to be high among movers from prosperous farm areas, in close proximity to employment centers.<sup>52</sup>

Abrahamson<sup>53</sup> conducted a survey of a hundred farm exiters who migrated to Saskatoon (Saskatchewan) and sought non-farm employment. The survey attempted to collect information on (1) migrants' situation before off-farm migration took place, (2) causes

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<sup>51</sup>Ibid., p. 198.

<sup>52</sup>Ibid., p. 201.

<sup>53</sup>Jane A. Abrahamson, Rural to Urban Adjustment (Ottawa, Department of Regional Economic Expansion, 1968).

for off-farm migration, (3) the migration decision process, (4) migrants' situation after off-farm migration. Recourse to recall data is a major weakness of this study.

The major cause for off-farm migration was material deprivation on the farm. Other factors such as isolation from medical services, from secondary schools, and from advanced training played also an important role. Poor health or crippling accident were the immediate causes in several cases.

The majority of migrants relied on farming only as a source of income. There was no indication that off-farm migrants lacked progressiveness in adopting new farm technology and practices; rather, the economic base of the farm was not sufficient to support such modern technology.

Off-farm migrants tended to recall farming and the social life of the farm neighbourhood in an idealized version. Such an idealized vision may not correspond to the situation prevailing at the time of migration since "the disintegration of farm communities associated with farm consolidation and the trend away from the small family farm had served frequently to undermine the traditional basis for rural social life."<sup>54</sup>

Off-farm migrants' low level of education and vocational training put them at a disadvantage in the urban labor market. Consequently, difficulties of adjustment to urban employment, such as recurring unemployment, inadequate wages, and dislike of working

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<sup>54</sup> Ibid., p. 115.

conditions, were by far the migrants' major adjustment problems. Migrants, as a group, appeared to be at a disadvantage: rate of unemployment among off-farm migrants was three times the average rate for Saskatoon and migrants were mainly employed in unskilled jobs. Problems related to social integration and psychological stress symptoms were mentioned in many cases.

The decision to migrate seemed to have been made as a result of poverty on the farm rather than because of attractive non-farm alternatives. Social and psychological factors also affected the decision to migrate.

In conclusion, micro-level studies have provided some valuable insight into the factors of off-farm movement and migration, though some contradictory results have been obtained. Differences in methods most likely account for a large part of these inconsistencies.

#### Policy Recommendations

A constantly recurring policy issue related to off-farm movement and migration is the choice of actions to be taken to ensure the adequacy of the number of farm operators or the size of the farm labor force. Most economists have regretted the excessive number of farms as well as the excessive size of the farm labor force. These are generally seen as reflecting resource misallocation in the economy and as causes of low returns to resources, especially labor, in the farm sector.

Johnson<sup>55</sup> saw the accelerated transfer of labor from the farm to the non-farm sector as desirable. Policy decisions, in this context, are a matter of devising ways to improve and accelerate this transfer. According to Johnson, this could be accomplished by having three classes of programs concerning respectively information, assistance, and educational improvement in rural areas. Information disseminating programs should be devised so as to make farm operators and workers more aware of non-farm job opportunities. Assistance programs would aim at increasing the number of off-farm movers and migrants, and at reducing the number of "decision mistakes" leading to re-entry into farming. Finally, the setting up of programs geared at raising the level of educational attainment in the farm population was advocated by Johnson as the best long run policy to improve transfer of labor from the farm to the non-farm sector. Because farm people had showed reluctance to migrate over long distances, Johnson recommended encouraging the creation of job opportunities in rural areas.

Sjaastad downplayed the severity of the "farm problem" (popular expression referring to the problem of low returns to farm resources due to the excessive number of operators) by stressing its self-liquidating nature:

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<sup>55</sup>Johnson, "Labor Transfer."

The conclusion I would venture is that long-run prospects of American agriculture are improving with each passing year. As the relative size of the farm sector diminishes, a greater ease of adjustment to even further revolutions of supply should result. It is conceivable that with a conscientious maintenance of full employment and no blunders in government farm policy an alleviation of the farm income problem may reasonably be anticipated.<sup>56</sup>

Despite Sjaastad's denials, this seems to imply that the best course of action for policy makers is to sit and wait, while only trying to ensure low non-farm unemployment.

Smith<sup>57</sup> came to conclusions regarding the role of information which are substantially different from Johnson's. Smith showed that information that discouraged potential off-farm movers or migrants filtered back from disenchanted movers and migrants. Consequently, facilitating and easing the flow of information may very well reduce the rate of off-farm movement and migration. As Smith puts it:

The possibility of stimulating continued migration through improved information services is obviously questionable unless the experience of urban employment and urban life is such that it can be accepted in full knowledge of its consequences. Indeed, migration would probably be socially undesirable if its consequences were so personally calamitous as to result in return migration, or the desire to return to farm life.<sup>58</sup>

From this analysis, Smith concluded that emphasis should be on preparing potential movers and migrants to their new setting:

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<sup>56</sup> Sjaastad, "Occupational Structure," p. 27.

<sup>57</sup> Eldon D. Smith, "Nonfarm Employment Information for Rural People," Journal of Farm Economics 38 (August 1956): 813-827.

<sup>58</sup> Ibid., p. 820.

The evidence suggests that for some fairly large groups of underemployed rural people the baffling problem of how to prepare them for urban life must be solved before informational services can be very effective.<sup>59</sup>

Hathaway and Perkins added the missing link to Smith's argument, that is, the empirical evidence of the importance of return movement and migration.<sup>60</sup> They inferred from this discovery that, if an overall objective is to reduce the number of people employed in the farm sector, it can be better achieved by increasing the proportion of off-farm movers and migrants who stay in non-farm occupations, that there is no need to give incentives to more people to leave farming, and that it suffices to ensure that a higher proportion of them make a successful move to non-farm employment. Research should be devoted to factors affecting the success or failure of movement and migration. Programs should be designed to improve the success rate by changing the characteristics of these movers and migrants, or by altering the nature of the labor market these movers and migrants must enter.

Hill, before Hathaway and Perkins, showed that farmers leaving agriculture are not "those with lowest incomes, the least efficient, the poorest farmers, or the physically disabled."<sup>61</sup> Consequently, he warned against a policy of low farm prices as a means to accelerate off-farm movement and to increase productivity of the farm sector; such a policy could have the opposite effect.

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<sup>59</sup> Ibid., p. 825.

<sup>60</sup> Hathaway and Perkins, Movement of Labor, pp. 32-35.

<sup>61</sup> Hill, "Farmers Leaving Agriculture," p. 426.

Consistently with his identifying non-farm unemployment as the major impediment to off-farm movement, Hill recommended policies geared to ensure a low unemployment rate in the whole economy.

### Conclusion

The above review of literature on off-farm movement and migration is comprehensive, but no claim is made that it is exhaustive. It exemplified, however, the diversity of approaches encountered in the literature and, more important, the often conflicting results which have been obtained.

Agreement is reached on money income being the prime factor or motivation affecting off-farm movement and migration; but the relative importance of non-monetary factors remains to be established. Lumping together these factors, and naming them "psychic income", appears to lead to imprecise empirical work. At a macro-level, the adverse effect of non-farm unemployment on the rate of off-farm movement and migration is generally acknowledged, but its selective and differential effect on various types of potential movers and migrants is unknown. Uncertainty still exists, as to whether movers actually increase their real income as a result of off-farm movement or migration. Distance to non-farm employment center, assumed to represent location of alternative non-farm jobs, is generally considered to be negatively related to off-farm movement and migration; conflicting results, however, were obtained, which suggest that the effect of this distance factor is not simple; further empirical and theoretical work is needed in this area. Conflicting evidence appears,

also, as to the role of operators' involvement in off-farm work in off-farm movement and migration; is it a transitional state or a permanent state corresponding to a new equilibrium?; does it facilitate exit from farming? Another major uncertainty pertains to the effect of off-farm movement and migration on income differentials, between the farm and non-farm sectors, and within the farm sector itself.

Most of the studies which were reviewed pertained to the U.S.A. and only a few to Canada. It is difficult to say whether results obtained in the U.S.A. can be generalized to Canada, or other countries. It should be noted, however, that the U.S.A. and Canada have similar social and economic structures. Furthermore, differences between two regions in Canada are often greater than between one region in Canada and its closest neighbour states. Thus it is reasonable to consider that results which were obtained for a region of the U.S.A., can be generalized to a region of Canada, if the regional agricultural and rural socio-economic structure are similar.

A major conclusion to be drawn from this review of literature on off-farm movement and migration is that, though economic factors are important in explaining the decision to leave farming, social and psychological factors must also be considered. The benefit-cost model of off-farm movement and migration seems to be ill-adapted to pursue the investigation of social and psychological factors. Further theoretical work is necessary.

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